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AN

INAUGURAL ESSAY

ON

EPILEPSY,

SUBMITTED TO THE EXAMINATION OF THE

Rev. JOHN EWING, S. T. P. Provost;

THE

TRUSTEES AND MEDICAL FACULTY

OF THE

UNIVERSITY OF PENNSYLVANIA,

On the 17th day of May, 1796.

FOR THE DEGREE OF DOCTOR OF MEDICINE.

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Dr Perkins

with the compliments

of the Author

TO

Benjamin Ruſh, M. D.

PROFESSOR OF THE INSTITUTES AND OF CLINICAL MEDICINE,

IN THE

UNIVERSITY OF PENNSYLVANIA;

THIS DISSERTATION

IS INSCRIBED,

AS A TRIBUTE OF GRATITUDE AND ESTEEM,

BY HIS SINCERE FRIEND AND AFFECTIONATE PUPIL,

JOHN C. OTTO.

Epilepſy.

THE ſubject of the preſent Diſſertation has received different names. It has been called *morbus comitialis*, from its occurring in crowded aſſemblies; *morbus herculeus*, from the difficulty of cure, or perhaps from the ſtrength diſplayed by the miſerable patient in a paroxyſm of this diſeaſe. The *falling ſickneſs*, however, is a name more frequently given it. This, perhaps, is as applicable as any, for the diſeaſed falls down upon an attack of it. Even ſuperſtition has not been idle upon this ſubject. It has aſſumed the name of *morbus ſacer*, from the ſuppoſition that the gods puniſhed men with this diſeaſe, as a peculiar mark of their diſpleaſure. And a perſon, in perfect health, falling down and appearing in the moſt violent agony, without any apparent cauſe, was a ſufficient reaſon to induce the ignorant to aſcribe it to ſome ſupernatural agent.—We ſhall conſider it under the moſt familiar name of *Epilepſy*.

Dr. Cullen defines it to conſiſt " in convulſions of the greater part of the muſcles of voluntary motion, attended with a loſs of ſenſe and ending in a ſtate of inſenſibility and ſeeming ſleep." This comprehends the prominent features of the diſeaſe, and is ſufficient to diſtinguiſh it from *palſy*, *apoplexy*, *cataleptſy*, *tetanus*, and other complaints.

A FIT.

AS the circumſtances attending it are nearly the ſame in all perſons, except with regard to violence, it will be unneceſſary to be prolix. The perſon attacked falls down ſuddenly with a perfect loſs of ſenſe in violent caſes; but in the mild, there is ſometimes a recollection of whatever has paſſed during the paroxyſm. The jugulars ſwell and the veſſels of the head appear turgid; there is a violent contraction and alternate relaxion of the muſcles of the body or part of it: thoſe of the face are particularly liable to be affected, and exhibit violent diſtortions. A frothing of the mouth attends; and the eyes are frequently turgid and turned upwards. The reſpiration and pulſe are hurried and irregular; the latter ſeldom ſhewing any preternatural force or ſoftneſs. The paroxyſms continue generally but a ſhort time, and then terminate in dulneſs and ſtupidity, which continue in duration moſt commonly in proportion to the violence of the preceding attack. After this, the patient fre-

quently enjoys good health until he is again attacked in the manner already deſcribed.

REMOTE CAUSES.

THESE are whatever have a tendency to produce debility in the animal economy in general, and particularly in the nervous ſyſtem. This is of two kinds, direct and indirect. The firſt conſiſts in an unuſual abſtraction of the ſtimuli that ſupport life; and the latter in the exceſſive application of them. Under the firſt head may be ranked fear—the abſtraction of the ſtimulating paſſions—exceſs in venery—depletion to a conſiderable degree—ſome poiſons—odours, &c. under the latter, all the ſtimulating paſſions—frequent intoxication—the application of particular medicines, as ſtramonium—intenſe ſtudy or continued application of the mind to any particular ſubject. Theſe cauſes have been known to give a diſpoſition to this diſeaſe, and their action, it is evident, is principally on the brain and nervous ſyſtem.

PREDISPOSING CAUSE.

THIS, like all other diſeaſes of the nervous ſyſtem, depends upon a debility or mobility of the nerves. This I infer,

1ſt, From thoſe moſt ſubject to this diſeaſe; and,

2dly, From the time it moſt frequently attacks.

The ſlighteſt retroſpect will convince us of the truth of this cauſe. It is the delicate female, and tender infant, that moſt frequently ſuffer: they, whoſe minds are ſubject to a conſtant change, and upon whom every impreſſion excites to conſiderable action, are the moſt frequent victims. Delicate civilized life has become familiar to it, while rude and ſavage nations ſcarcely know the pang of a convulſion.

The brain in children is larger and leſs firm than in advanced years: its ſoftneſs cauſes it to be thrown more eaſily into irregular action upon the application of any thing of an irritating nature. Plethora diſpoſes to an attack of this diſeaſe; and the quantity of blood ſent to the brain, in childhood, in proportion to the body, is much greater than in any ſubſequent period of life. It needs no other proof that theſe are the real cauſes, than this ſingle reflection that maturity alone has ſometimes reſtored to health. A paroxyſm of anger has no influence upon the firm nerves of a nurſe, while it will convulſe a delicate infant at her breaſt.

2dly, This diſeaſe frequently makes its attacks at night, or early in the morning; a ſeaſon when

the animal economy is the moſt debilitated. The excitement or ſtrength of the body is diminiſhed, while the aptitude to receive impreſſions is increaſed. From theſe circumſtances, we muſt conclude that debility in the whole ſyſtem, and particularly in the nervous, diſpoſes to Epilepſy—I ſay particularly in the nervous; for if it reſides in the arterial, a fever, and not convulſions, is the effect of an application of an occaſional cauſe. Hence we obſerve, thoſe who are ſubject to convulſions, are ſeldom afflicted with an inflammatory fever, and *vice verſa*.

Nervous diſeaſes are the offspring of cultivated ſociety; the modes of life and manners attendant upon ſuch a ſtate, give a quickneſs of perception and delicacy of feeling. The ſcenes of a tragedy are too feeble to produce conſiderable emotion in a ſavage boſom; while the civilized and refined fair one, ſometimes faints, and is occaſionally convulſed. Her feelings are ſo eaſily excited, and her imagination ſo ſoon wrought upon that the different objects of diſtreſs, are frequently preſented to her view, even in dreams, while the ſavage ſlumbers undiſturbed. The higher this refinement is carried, the more frequently will theſe unnatural diſeaſes appear. Even our own country can bear teſtimony of this, by the revolution of them that is conſtantly taking place.

Happily for mankind, a prediſpoſition to Epilepſy may exiſt through life, without the diſeaſe actually appearing. The debility occaſioned by cold diſpoſes to inflammatory fever; but a diſeaſe does not occur without the application of ſome diſproportioned ſtimulus. Parallels to this are to be found in every medical author.——A prediſpoſition to Epilepſy is ſometimes derived from anceſtors: the diſeaſe is not inherited, but a mere aptitude to be affected upon the application of ſome occaſional cauſe. This is not peculiar to Epilepſy, for Gout and Conſumption exhibit inſtances familiar even to the vulgar. The deſcendants of perſons labouring under theſe diſeaſes, frequently avoid them by abſtinence and care. It will not appear ſtrange, that a prediſpoſition to certain diſorders is derived from anceſtors, when we reflect that diſpoſition, faculties of the mind, features, and even form itſelf, is tranſmitted. Thus a ſimilitude appears between parents and children in the ſtructure and organization of every part of the ſyſtem. Van Swieten * ſays, that the diſpoſition ſometimes paſſes one generation and appears in the next: the ſon, by an active and ſober life, ſubdues it; but communicates an aptitude to his offspring. Dr. Blackmore has obſerved the ſame thing to take place in the gout; and has happily compared it to a river

* Vol. X. p. 315.

in Africa, that runs through a great extent of country, and then diſappears, but emerges again from the earth at a diſtance from whence it deſcended. The ſame has been obſerved of Scrophula, and other diſeaſes.

EXCITING CAUSES.

THESE may be ranked under two general heads: 1ſt, Thoſe that produce violent excitement; and, 2dly, Thoſe that produce debility.

The firſt may be ſubdivided into 1ſt, Thoſe cauſes that act primarily upon the brain; and, 2dly, Thoſe that act primarily upon the ſyſtem at large, and, through its medium, influence the nervous ſyſtem.

Under the firſt head of the ſubdiviſion are included ſplinters of the *cranium*—the ends of ſharp inſtruments penetrating it—oſſification of the membranes, &c. Diſſections have ſhewn that all theſe have induced the Epilepſy.

The paſſions prove powerful exciting cauſes of this diſeaſe. Cæſar was ſubject to it, eſpecially on

the eve of a battle.* Joy and anger have each produced it. The firſt ſeems to act principally upon the nervous ſyſtem; the latter has conſiderable influence upon the arterial. They act as violent ſtimuli, proſtrating in an inſtant, the nervous ſyſtem. The death of the Roman mother at the ſight of her ſon, returned from the battle of Cannæ, was occaſioned by the violent impreſſion of joy—it muſt have acted like a powerful ſhock of electricity, producing, perhaps, a deſtruction of excitability.

Anger ſeems to derive ſome of the violence of its action from the inſtrumentality of the blood; for the face is fluſhed, the veſſels of the head turgid, and every evidence exiſts of an increaſed determination to the brain—Joy and anger produce indirect debility in the nervous ſyſtem in the ſame manner that ſome contagions and other ſtimuli proſtrate the arterial. Perhaps the effects of certain odors may be explained in a ſimilar manner.

The ſight of perſons afflicted with this diſeaſe, has produced a like affection in the bye-ſtanders. This circumſtance has taken place ſo frequently as to make it impoſſible to deny it: the moſt remarkable inſtance of this kind occurred at the poor-houſe in

* Zimmerman's Experience, Vol. II. p. 333.

Hærlem ; where nearly all the children were affected by ſeeing a perſon attacked with it.

The method of accounting for it ſatisfactorily, requires a more extenſive knowledge of the laws of the human frame than I poſſeſs. Man is ſaid to be an imitative animal ; and to this ſenſe of imitation many have aſcribed this phenomenon. The horror, induced at the ſight of a perſon labouring under this diſeaſe, has likewiſe been called in to explain it. Similar facts preſent themſelves every where ; and Whyte, in his elaborate treatiſe upon the nerves, has mentioned many. He accounts for it by ſuppoſing that, " in theſe caſes, the impreſſion made upon the mind, or *ſenſorium commune*, by ſeeing others in a diſordered ſtate, raiſes, by means of the nerves, ſuch motions or changes in certain parts of the body, as to produce ſimilar affections in them ; and hence it is, that the ſight only of a perſon vomiting has often excited the ſame action in others." And ſo great is the ſuſceptibility to action in ſome perſons, that the ſlighteſt impreſſion will induce a diſpoſition to imitation.

Over-diſtention of the blood-veſſels of the brain proves a frequent exciting cauſe : this is evidenced by a turgeſcence of them, and a dimneſs of ſight taking place previous to a paroxyſm. The precurſors, as ſhall be ſhewn hereafter, corroborate it ; for they

diſcover increaſed excitement in the brain. Thoſe effuſions that appear upon diſſection put the queſtion beyond the ſhadow of doubt. The apparent fullneſs that occurs in the veſſels previous to a fit, induces the opinion that the effuſions are the effect, and not the cauſe. But Epilepſy frequently ſucceeds thoſe diſeaſes that are univerſally confeſſed to ariſe from too great a determination to the brain, ſuch as *mania* and *apoplexy*. That over-diſtention of the veſſels of the brain, is a fruitful cauſe of Epilepſy, is evidenced, by the manner of operation of ſeveral of the exciting cauſes. Heat applied to the head—anger—ſevere exerciſe—a ſurfeit, or fit of intoxication, have all a tendency to this effect.

Debility was conſidered as the pre-diſpoſing cauſe of Epilepſy; now plethora often accompanies, and is a mark of debility. This over-proportion of blood that conſtitutes plethora, renders the veſſels of the brain, very liable to be over-diſtended, by the application of any ſubſtance or means that increaſes the circulation.

But there are other exciting cauſes that ſeem to act primarily upon the body. In fact, the application of heat, exerciſe, and intoxication, already mentioned, produce over-diſtention of the veſſels of the brain by the influence they have upon the circu-

lation. Convulſions ſometimes occur in inflammatory fevers, from the ſtimulus of the blood upon increaſed excitability, or from contagion, and are only to be cured by the liberal uſe of the lancet. I ſaw a caſe in which the convulſions, and its precurſors tremors, were gradually diminiſhed by four bleedings.

The moſt fruitful and leaſt dangerous occaſional cauſes, in children, are ſtimuli acting upon particular parts, and thence communicated to the whole nervous ſyſtem. Theſe are worms, teething, the irritation that attends the eruption of certain contagious diſeaſes. To theſe may be added, the ſtimulus of a calculus in the kidney, or any local applications; cantharides have proved ſufficiently violent to produce this effect, and even the acrimony of the ſanies of old ſores has had a ſimilar operation. Poiſons—great pains—the ceſſation or ſtoppage of humors that uſed to be evacuated, as the drying up of old ſores—the retention of the menſes, and the ceaſing of the bleeding in piles, have all had the ſame effect.

Among the exciting cauſes, that muſt not be omitted that is accompanied with the *aura epileptica*. This is a ſenſation of ſomething, ariſing from the body or extremities and extending upwards, like a blaſt of wind, or ſtream of cold water; and, when it reaches the brain, a paroxyſm immediately enſues. The circumſtance of

the ſenſation going, from a particular part, directly to the brain, would induce the ſuppoſition, that it originated from an irritation of a nerve; but nice obſervation upon this point diſcovers, that the ſenſation is not continued along the courſe of any nerve. Some inſtances, however, have been mentioned by authors, where the *aura epileptica* aroſe from a viſible irritation of a part.

A fruitful exciting cauſe is ſtill to be mentioned; viz. whatever makes a ſtrong impreſſion upon the nervous ſyſtem, occaſioning great pleaſure or pain. Unleſs the force of impreſſion is conſiderable, no remarkable change occurs, except the prediſpoſing cauſe exiſts to a conſiderable degree. The impreſſions that induce pleaſure, ſeem to be conveyed directly to the brain, by the nerves; while thoſe that induce pain, frequently act primarily upon the muſcular fibres, producing diſtention and inflammation. The cauſes of both being the ſame, only varied in order and degree. They all ſeem to act by creating an exceſſive excitement in the brain in particular, or in the whole ſyſtem in combination with it. There is no neceſſity for the prediſpoſition to exiſt, to a conſiderable degree, in every caſe; for the violence of the occaſional cauſe is ſometimes ſufficient of itſelf to bring on the diſeaſe. And, when induced, it is the ſame, by whatever cauſe effected. Like the pleuriſy, it may

be excited by intoxication, the heat of the fire, &c.; but remains unaltered by whatever occaſions it.

That violent ſtimuli ſhould produce irregular and exceſſive action in a part, is no new law of the animal economy. We ſee it illuſtrated every where, in the familiar diſeaſes of the arterial ſyſtem. We might as well expect to ſee a veſſel ride ſafely and equably in a gale of wind, as to expect the excitement of the ſyſtem to be regular, upon the application of a violent ſtimulus. This law is obſervable through all nature, and political bodies give confirmation, daily, to this aſſertion. Whole nations have been rendered Epileptic, to uſe a new expreſſion, by hearing the exploits and victories of their armies. There is a degree of excitement which Dr. Brown places at 60, on his ſcale, within the boundaries of regular action; but if it extends further, the weakeſt and moſt excitable parts are thrown into irregular or convulſed action.

The ſame takes place with regard to diminiſhed excitement: a certain quantity of ſtimuli and excitability, are neceſſary to ſupport the proper action of every part of the animal economy. If the excitement, in any particular part, is below 20 in Dr. Brown's ſcale, this part ſuffers; if this happens to be the nervous ſyſtem, what are generally called convulſions,

and ſyncope, will enſue; if in the arterial, fevers of too little action; and, if in the ſtomach, dyſpepſia. Hence I conclude, that the application or abſtraction of ſtimuli, beyond a certain degree, is incompatible with regular action, and that this irregularity occurs in the weakeſt part. I have uſed Dr. Brown's ſcale to elucidate my ideas upon this ſubject, without wiſhing to imply my belief that the graduation is critically juſt. If the debility, or tone, exiſts nearly equally over the whole ſyſtem, they may be carried to a very great degree without being productive of diſeaſe.

But there are exciting cauſes of this diſeaſe that conſiſt in an abſtraction of ſtimuli; theſe are, a great loſs of blood—the abſtraction of the ſtimulating paſſions—hunger—the ceſſation of pain, and many others mentioned by medical writers. When theſe occur, there is an abſtraction of a great ſupport to the ſyſtem. A feeble old man, who has been uſed to walk with a cane, might as readily hope to ſupport himſelf in a firm and regular ſtep, after this aſſiſtance is taken from him, as a phyſician to ſuppoſe that regular action could be continued in great debility. After evacuating the water from the abdomen, in the aſcites, ſyncope follows, unleſs bandages are applied: the abſtraction of ſo great a ſtimulus deſtroys that tone which is neceſſary to regular action.

The influence of joy, heat, and the exceſs of blood, have already been mentioned as inducing this effect. That law of the ſyſtem, that brings theſe two extremes to the ſame point, has been noticed. So great an impreſſion had this fact upon Dr. Brown, that his theory falſely propoſed the cure of both of them, even when acute, by the application of ſtimuli. It may not be improper to evidence a few caſes, in which the ſame effects obtain through oppoſite cauſes. Perhaps this will prevent the ſtartling that might enſue, upon hearing that a fit of Epilepſy may be brought on by oppoſite means.

A review of a few diſeaſes, will ſhew that a ſimilarity exiſts among them that is ſeldom obſerved—it will make us give thoſe directions that will prevent the repetition of them—it will give us more clear ideas concerning their nature and cure. A noted medical author, much ſubject to the gout, has affirmed, that he could produce a paroxyſm by taking a moderately draſtic purge; and, who is there that knows not, that it may be produced by a fit of intoxication? How often do we ſee gangrene from exceſſive action, and how frequently does it ariſe from deficiency. Apoplexy has been occaſioned by depletion, as well as by intemperance. The arterial ſyſtem will frequently ſhew as few ſigns of action from the violent impreſſion of a ſtimulant contagion, as from

conſiderable depletion by a lancet. Mania and delirium, without any collateral proof, afford no certainty of their origin from exceſs or deficiency of action; and Whyte has obſerved a ſlow pulſe to ariſe, ſometimes from a cauſe directly oppoſite to that which generally induces it. Theſe facts are ſufficient for my purpoſe.

Many of the exciting cauſes mentioned, act priprimarily and principally upon the nervous ſyſtem; but others on the arterial. The operation of the firſt would naturally ſuggeſt the idea, that whatever diſeaſe aroſe, would, in conſequence, be of the nervous kind; but the latter not ſo. Such would be the caſe if there was not a prediſpoſition in the nervous to be affected. When the ſuſceptibility to impreſſion exiſts in a great degree, diſeaſe may be induced even when the ſtimulus acts through the medium of another ſyſtem. In ſavage and ruſtic life, where employment gives a firmneſs and vigour to the conſtitution, the paſſions, excited to a high degree, produce fever; but in refined civilized ſociety, their effects are often upon the vehicles of pleaſure and pain. If it is the buſineſs of the nerves to convey impreſſions to the brain, and obey, the mandates of the paſſions, through the inſtrumentality of the will, whatever affects the mind, muſt communicate a ſimilar influence to them. There is no novelty in the idea that there are ſtimuli that act principally upon the

nervous ſyſtem; the ſame will be obſerved to take place with regard to every other ſyſtem or part of the body. They are each of them induced with a diſpoſition to be acted upon by impreſſions of a peculiar kind. But the animal economy is ſo conſtituted, that there is a general ſuſceptibility to certain ſtimuli: beſides, the different parts are called into action, by ſympathy, by the violent impreſſion of a body on any particular part. Thus columbo acts upon the ſtomach and bowels—bark upon theſe and the arterial ſyſtem—balſam copaiba upon the urinary veſſels—mercury upon the glandular and lymphatic ſyſtems—oil of amber upon muſcular fibres—and opium upon the whole animal machine.

But to ſhew more clearly that the appearance of a diſeaſe depends much upon the peculiar exciting cauſe, we need but ſurvey diſeaſes in general, and their particular ſituation. Contagion moſt commonly affects the arterial ſyſtem, and the ſkin; but the peculiar one of human effluvia has influence upon the nerves in particular. The ſcrophula affects the lymphatic glands—the itch and leproſy, the ſkin. When heat and cold alternate, the diſeaſes produced, are thoſe of the arterial ſyſtem. So that not only medicines have their chief effect upon particular parts of the body, but likewiſe the cauſes of diſeaſe act ſpecifically upon particular parts. It is true, that violent

diſeaſes affect every part of the body; but it is equally true, that their principal force is upon particular parts or ſyſtems. Who has not ſeen convulſions attend inflammatory fevers, and increaſed action in the blood veſſels in nervous complaints? Hence I would infer, not only that debility in the nervous ſyſtem prediſpoſes to affections of it; but, from analogy and facts, that particular cauſes exert their chief influence upon it; and, that it may be affected by a violent impreſſion upon the arterial, or ſome other ſyſtem.

In what manner the mind acts upon the body, or the body upon the mind, is unknown to me; but the advocates for the materiality or immateriality of the ſoul, all confeſs that their connection is great. Epilepſy, affecting the faculties of the mind, frequently ariſes from impreſſions made upon the body; and it, in turn, is often affected with convulſions by a mere aſſociation of ideas.

PROXIMATE CAUSE.

This conſiſts in an irregular mixed action of the nervous ſyſtem. The term *irregular* is uſed, to diſtinguiſh it from the action that exiſts in health; and *mixed*, to diſtinguiſh it from the exceſs that takes place in tonic gout, and tonic madneſs, and the deficiency that attends hypochondriaſis. Haller ſuſpects

that a kind of apoplexy is produced by the increaſe of action in the veſſels of the brain, and adduces, as a proof of it, the redneſs of the face, increaſed heat, and *deliquium animi* that accompanies this ſtate. That the energy of the brain is affected, is evident from the phenomena of the diſeaſe; and that in ſome it is too great, and in others too ſmall, is plain, from the phlogiſtic and antiphlogiſtic plan of cure being in different caſes attended with ſucceſs. It holds the ſame rank in nervous diſeaſes, that Dr. Cullen's ſynochus and Dr. Ruſh's typhoid ſtate of fever does in the in the arterial. As the ſcarlet, puerperal, and hectic fevers have been conſidered, by many authors, as inflammatory, and by others of equal eminence, as poſſeſſing too little action; ſo Epilepſy has, in like manner, undergone this variety of opinion. Since we have but little acquaintance with the nervous ſyſtem, and few marks to diſtinguiſh particular grades of action in it, indications of cure, from a knowledge of the proximate cauſe, will be attended with difficulty. A reference muſt be had to the primary cauſe, and the particular ones that renew the paroxyſms. I know of no other criterion, to judge of exceſſive action in the nervous ſyſtem, than the pulſe. In Dr. Ruſh's practice, I have ſeen tremors, hiccough, fainting, and convulſions, attended with a tenſe pulſe, cured by the proper and liberal uſe of the lancet.

DISSECTIONS.

Upon the cranium being opened, phenomena preſent that will direct us to the true cauſe of the diſeaſe. It requires much attention to diſcriminate between cauſes and effects; and we are much aſſiſted, in this part of the enquiry, by a review of the circumſtances that preceded death. Water—pus—bony excreſcences—depreſſions of the cranium—fragments or points of bones have all been obſerved; but, in ſome caſes, the brain appears perfectly ſound.* A ſtrict examination might perhaps have diſcovered preternatural ſoftneſs or hardneſs in ſome part; but, if the niceſt ſcrutiny ſhould find neither of theſe to exiſt, it will not appear ſtrange to my mind: for, being a diſeaſe of the whole nervous ſyſtem, we have no right to expect morbid appearances in the brain in every caſe—they do not always exiſt in mania; nor do the lungs ſhew marks of injury or ulceration in every caſe of phthiſis pulmonalis.

EFFECTS OF THE DISEASE.

Epilepsy being a violent diſeaſe, its effects, it may be preſumed, are often terrible. Palſy and apoplexy ſometimes ſucceed it; and death itſelf is not unfrequently its termination. Diſtortions and defor-

* Willis' Pathology of the Brain.

mities take place from the ſame cauſe that debility, in the lungs, ſucceeds pneumonia, and, in the joints, rheumatiſm. But however diſagreeable to the eye of the afflicted, and the beholder, the want of ſymmetry may appear, it is a mere nothing to what the mind ſuffers. The ſublime and diſcriminating judgment, and wonderful memory, are both proſtrated. All thoſe faculties that exalt man to the firſt grade in creation, are frequently annihilated, and happily with them a ſenſe of his ſituation.

Although the mind has much influence upon the body, ſtill a ſtate of idiotiſm is not incompatible with perfect or occaſional health. If it ſhould be aſked why the body aſſumes an aſpect of health, and has all its functions performed with regularity, after a paroxyſm, and not the mind? I would anſwer, that the ſtructure of the brain may be ſo much deſtroyed as to prevent the operation of the faculties of the mind, without receiving that degree of leſion that hinders the due performance of action in the body. There appears to be an exact and equal ſtate of tenſion, neceſſary in every part of the brain for the proper exerciſe of the faculties of the mind, which is not requiſite for the regular action of the functions of the body.

REPETITION OF FITS.

Upon what does the repetition of fits depend? Some have aſcribed it to habit; but this, in my mind, amounts to nothing more than a new term to expreſs an ignorance of the cauſe: others to a recurrence of debility. But I would object to both of them, for the following reaſons—With regard to *habit*,

1ſt, Becauſe the paroxyſms come on generally at very irregular periods, or when at regular ones, they may be traced to ſome evident exciting cauſe, as the influence of the moon, &c. in the ſame manner as the irregular attacks.

2d, Becauſe the patient can produce a paroxyſm, almoſt at any time, by imprudent expoſure of the ſun, fatigue, intoxication and other means.

It is true, with reſpect to debility, that whatever increaſes it, when inflammatory action does not exiſt, increaſes the prediſpoſition to the diſeaſe; and, if carried ſufficiently far, the diſeaſe itſelf: but I have already mentioned that an aptitude may exiſt, without the diſeaſe being ever produced. How often has the contagion of a violent fever remained dormant in the ſyſtem for days, when no occaſional cauſe has been applied to bring it into action; and, in many inſtances, it has paſſed out without injuring it. If it ſhould

be urged in favour of habit having produced a repetition of fits, that the interval between them conſtantly decreaſes; I would reply, that the paroxyſms merely induce an increaſed ſuſceptibility, in the ſame manner that an attack of pneumonia, by debilitating the lungs, induces a diſpoſition to be renewed. And who has ever aſcribed a recurrence of it to habit? Nor does the idea ſuggeſted operate in favour of debility; for it is but one link in the chain of cauſes that produce this diſeaſe. The inhabitants of all northern and ſouthern regions are expoſed to all the debilitating cauſes that induce a prediſpoſition to pleuriſy; but they are very ſeldom ſubject to it; becauſe they are not expoſed to that moſt common of all occaſional cauſes, the frequent and rapid ſucceſſion of heat to cold. Hence I would aſcribe the repetition of fits entirely to an application of ſome exciting cauſe.

PRECURSORS.

The Epilepſy frequently comes on ſuddenly, without the leaſt previous warning; but it ſometimes has its harbingers. Theſe moſt frequently precede attacks that come on at regular and ſtated periods, and appear to be the firſt impreſſions of cauſes that act more durably than violent. In this particular, it is upon the ſame footing with the apoplexy and the gout; and moſt diſeaſes, of the violent kind, are uſhered in by marks which afford an oppor-

tunity of frequently preventing any injury from being received. I have obſerved the following precurſors; a change of diſpoſition and conduct—the moſt uncommon and inconſiſtent ideas—ſupercilious looks—haughty carriage—diſdainful and obſcure expreſſions, and unaccountable malice to particular perſons and their friends—ſtubbornneſs and ſelf-government. I am acquainted with a boy, who is eaſily managed in general, and diſplays a great pliability of temper and willingneſs to ſtay in the houſe, previous to a paroxyſm, always become refractory and run away. And I am acquainted with an elderly gentleman, whoſe ſervant could predict an approaching attack by his haughty conduct and impatience of contradiction. But in many, evident ſymptoms of plethora and determination to the brain take place, ſuch as coſtiveneſs, little ſleep, quickneſs of perception, headach, a dilated pupil, red eyes, and a fluſhed countenance.

Some perſons can foretel an attack, by an unuſual taſte being perceived; this will often occur ſeveral days, without any concomitant ſymptoms. I have mentioned the *aura epileptica* as accompanying the operation of one of the occaſional cauſes of this diſeaſe; but, upon reflection, imagine that this may be conſidered as one of the harbingers of it. For it is of ſuch a nature, that a meditated attack may be prevented by timely application. Beſides theſe, there

are others that are peculiar to different patients. A A ſtrict enquiry ſhould always be made; for a previous knowledge may direct ſuch methods to be purſued, as will tend to the moſt ſalutary purpoſe. An advantage has been taken of theſe precurſors; and, if it ſhould appear that a recurrence of fits depends partly upon habit, much will be gained; but, if this opinion is groundleſs, it will be advantageous to prevent them, becauſe the ſyſtem ſuffers conſiderably from every paroxyſm. In pleuriſy, where we do not ſuppoſe a repetition of attacks to depend upon habit, we bleed and uſe the antiphlogiſtic regimen in its various parts, to prevent that debility from taking place in the lungs, that paves the way for conſumption, and renders every ſlight diſorder of the ſyſtem liable to be accompanied by an affection of this organ.

PREVENTION OF A PAROXYSM.

It has already been obſerved, that a prediſpoſition may exiſt through life, without the diſeaſe taking place, and, that an occaſional cauſe may often be applied, without injury, if there is no prediſpoſition. But, when an epileptic diatheſis exiſts, much care muſt be taken to produce a firmneſs of conſtitution, and prevent the application of an exciting cauſe; for the preventing of a paroxyſm not only relieves the feelings of the patient, but gives the nervous ſyſtem time to regain that degree of ſtability, that permits actions

only in proportion to the violence of the impreſſion. Theſe circumſtances afford ſtrong inducements to obſerve the preceding harbingers, and to take advantage of their firſt appearance.

A review of them, will ſhew that they are generally ſymptoms of increaſed action in the veſſels of the brain, and ſometimes of plethora in the whole ſyſtem. Hence bleeding, and the antiphlogiſtic plan, will be found to be the moſt rational and ſucceſsful means of prevention. Theſe will only effect a reduction of that excitement in the arterial ſyſtem, which would otherwiſe ſtimulate to exceſs; and this theory and practice are powerfully ſupported, by the means we uſe to obviate an approaching attack of its ſiſter-diſeaſe, the apoplexy. If there is a periodical fulneſs of the veſſels of the brain, or the whole ſyſtem, nothing can be ſo efficacious, in practice, as the uſe of the lancet. Cullen has mentioned the beneficial effects of this remedy, and Bonetus and others recite ſome caſes, in which a perfect cure was effected by it. The pulſe ſhould be one of our principal guides, in directing us to its uſe.

Purgatives ſhould be joined with it; for they reduce excitement, and create a determination to the bowels, and may be uſed when phlebotomy is not neceſſary. There is often that degree of action, pre-

vious to a fit, that this remedy and emetics are juſt ſuited to deſtroy.

Van Swieten mentions an inſtance of a ſchool-maſter, who could prevent an attack by keeping his ſtomach moderately full.

Opium has proved of eſſential ſervice, if adminiſtered when the ſyſtem was labouring under direct debility. It prevents a ſuſceptibility from exiſting or ariſing to a great degree. When given at bed-time, it has frequently obviated an attack; for it hinders that degree of debility from occurring, that lays the foundation of a paroxyſm. Thoſe caſes that are preceded by the *aura epileptica*, ſeem particularly adapted to this remedy; for they ſhew a great degree of mobility in the nervous ſyſtem. Dr. De Haen has given a caſe in which the fits were prevented by avoiding ſleep, and which finally yield to opium.

Should an aſſociation of ideas prove an exciting cauſe, we muſt prevent a paroxyſm, by producing ſome violent impreſſion upon the mind, ſuch as fear; in this manner, the celebrated Boerhaave prevented it in the Poor-houſe at Hærlam. Should violent emotions occaſion it, we muſt be careful not to viſit thoſe places, in which there is a probability of having them excited. Should the influence of the moon produce a paroxyſm

we ſhould be careful to mark the precurſors, and act accordingly; but ſhould it be excited by that cauſe which is attended by the *aura epileptica*, we ſhould examine the part from which the ſenſation ariſes. If an irritating ſubſtance is obſerved, it ſhould be taken out, and then the diſeaſe has been known to diſappear; but, if the part has the reſemblance of being perfectly ſound, we ſhould nevertheleſs, make a conſiderable inciſion into it, or in the courſe of the *aura*. Bliſters and iſſues upon the part have often had the ſame effect, and even binding with a ſtring, the limb, above where the ſenſation originates, has prevented a paroxyſm. A deſtruction of the part, from which the *aura* ariſes, is the primary object, the manner of effecting it, whether by knife, cauſtic, iſſue, &c. has but little influence in the cure. Should fever, and the irritation of the eruption of the ſmall-pox or the meaſles, be the exciting cauſe, bleeding, cool air, &c. will prevent the repetition of paroxyſms. Should dentition be an exciting cauſe, cutting the gum upon the appearance of the tooth, will enſure returning health. Should acidity in the ſtomach, or an irritation in the bowels, be the exciting cauſe, their effects may be prevented by abſorbents, cathartics, and other remedies. Should heat, violent exertion, or fatigue occaſion a paroxyſm, the exerciſe of reaſon will prevent a return from thoſe ſources. If irritations, from any cauſe, be found to excite it, a preven-

tion of the diſeaſe conſiſts merely in obviating and avoiding them. Crowded aſſemblies, and places, where there is a want of free circulation of the air, ſhould not be frequented. From the previous enumeration of the occaſional cauſes, it is evident, they are many, and require each of them attention. Different perſons are more eaſily affected by ſome peculiar ones, and it ſhould be the buſineſs of the phyſician, to make himſelf acquainted with the influence of each, in order to prevent their effects.

TREATMENT DURING A PAROXYSM.

This is a period of the diſeaſe that is attended with the greateſt hazard, but one in which our exertions, moſt commonly, are the leaſt. Inſtead of danger and miſery exciting our attention in proportion to their degree, we remain idle ſpectators, and leave the patient to his fate. Why this ſhould be the caſe, in this diſeaſe, and not in others, is unaccountable; and thoſe gentlemen who look forward, with great reaſon, to the perfection of medicine, will diſcard an idea ſo unworthy of their profeſſion, and ſo humiliating to the pride of human reſources.

A review of the ſituation and circumſtances attending a fit, together with the cauſes and phenomena of it, will point to ſomething uſeful. Since perſons are

liable to be attacked in crowded aſſemblies, a primary object will be, to remove them to a place that is properly ventilated—all unneceſſary attendants ſhould be diſmiſſed. This has often been directed, but ſeldom any thing elſe has been attempted, and when it has, tice has been entirely empirical, and has ſhewn no regard, to the variety that is neceſſary when there are many caſes.

The exciting cauſes, the harbingers of the diſeaſe, together with the ſymptoms, diſcover that there is commonly too much action in the arterial ſyſtem. Hence bleeding will ſometimes be neceſſary to palliate a paroxyſm, and to reduce that action that would produce effuſions, ſo often the effect of this diſeaſe. From the continuance of the diſorder, the brain labours under chronic debility, and of courſe, is eaſily rendered apoplectical, by a ſmall increaſe of action. Diſſections ſhew that this is the moſt common attendant upon a fit that terminates in death. The quantity of blood taken ſhould be in proportion to the violence of the affection. Beſides, this treatment permits ſtimulants to be uſed afterwards with leſs danger and more efficacy.

When the pulſe is feeble, laudanum, when it can be given, may be adminiſtered with advantage.

The diffuſibility of this ſtimulus renders it extremely ſerviceable in many inſtances. It may be repeated according as occaſion demands.

But it ſometimes terminates in coma, and then thoſe remedies, ſhould be applied, that are in common uſe when this ſtate ſucceeds apoplexy. But as this laſt diſeaſe is more frequently attended with plethora, we will have leſs heſitation in uſing ſtimulants in Epilepſy than in it. Bliſters, acrid cataplaſms, the potential, and even the actual cautery, ſhould be tried.

TREATMENT DURING THE INTERVALS OF PAROXYSMS.

The ſuddenneſs of the attack, and the violent convulſions attending it, throw a veil of ſuperſtition over the minds of the firſt practitioners of medicine. It was viewed with reverential awe, and none dared attempt the cure of a diſeaſe that was ſuppoſed to be inflicted by the hand of heaven. Accident and time, however, effected ſome cures, that brought dawning and aſſenting reaſon to try ſimilar methods. Theſe have formed the only clue to the improvement of medicine in ſavage life; and, even in our preſent ſtate of ſcience and medicine, we take advantage of theſe in perfecting the healing art. And however much the reaſoning faculties of man deſerve to be boaſted

of, ſtill they are found inſufficient of themſelves, to diſcover the nature and cure of every diſorder.

Let us examine what accident or time has effected, and obtain whatever light, upon the nature and cure of this diſeaſe, theſe ſources will afford. Puberty, travelling, and the vigour inſpired by ruſtic and military life, have each cured it; hence we would infer, that tonics, in ſome caſes, may prove ſerviceable.

Van Swieten* remarks, that Hippocrates obſerved, that thoſe who are ſeized with a quartan, do not ſuffer the Epilepſy; and that a quartan, coming after that diſeaſe, cured it. He quotes a caſe in which the paroxyſm returned every week, and was cured by a quartan fever; and another, in which it returned ſeveral times a-day, that was cured by an epidemic fever. And all writers upon epidemics obſerve, that a violent attack of them carries off complaints of a very long ſtanding. From theſe laſt facts, we would conclude, that concentrating the excitement in the arterial ſyſtem may, in ſome caſes, be of advantage. But if we may judge from analogy, conſiderable morbid excitement raiſed in any part of the animal machine, except in the nervous ſyſtem, will be of equal ſervice. Willis relates the

* Vol. X. p. 369.

caſe of a girl who was ſubject to Epilepſy—ſhe, in one of her fits, fell into the fire and burned her face and head exceedingly; but, as long as the ulcers remained open, ſhe was free from the diſeaſe. Hollereus furniſhes us with a ſimilar inſtance. Dr. Meade relates a caſe of Epilepſy that occurred at the ſame period with the tides, and was cured by an ulcer on the head, the conſequence of a bliſter. Theſe laſt examples will ſerve to ſhew, that morbid excitement accumulated in any part of the animal economy, but the nervous ſyſtem, ſerves to relieve it—Some advantage was certainly derived, from diſcharging any great exceſs of excitement that might have occurred. The part affected bears the force of all impreſſions, and ſuffers the nervous ſyſtem to regain its tone. Dr. Hodges, in his treatiſe upon the plague, gives a remarkable example of this. During the rage of that violent diſeaſe in London, he had a ſeton in his leg, and attributes his eſcape from its deadly ravages to this cauſe. Whenever his ſyſtem became ſurcharged with contagion, the ſeton inflamed and diſcharged more conſiderably. This not only ſerves to ſhew the inflammatory nature of the plague; but likewiſe the means and neceſſity of keeping the ſyſtem at thoſe grades of excitement at which regular action or health muſt neceſſarily attend. Diarrhœa is often cured by bliſters; and Hippocrates has pronounced ulcers in the legs, to be very uſeful, even in vehement diſorders

of the lungs. Theſe facts are ſufficient to eſtabliſh the poſition; and my friend Dr. A. Alexander, in his inaugural diſſertation on the influence of one diſeaſe in the cure of another, has happily taken advantage of this law of the animal economy, and taught when and how to apply it.

It is true, that whatever is adminiſtered muſt have ſome operation upon the nervous ſyſtem; but as the doctrine of particular medicines exerting their chief influence on peculiar parts is firmly eſtabliſhed, we may uſe thoſe medicines that are powerful, without throwing the nervous ſyſtem into irregular action. Thus, through the peculiar organization of the glandular ſyſtem, mercury and its combinations act principally upon it. Dr. Darwin has happily called, the ſuſceptibility of particular parts to be acted upon by peculiar ſtimuli, by the name of animal ſelection or appetency—it depends upon their original conformation, and not upon an intelligent principle in them. From theſe facts and accidental cures, a mode may be inſtituted that will prove beneficial; but in every inſtance, it muſt be varied and directed by the ſtate of the ſyſtem.

In the end, the caſes noted amount to nearly the ſame thing; for the cure in all depended upon giving tone to the nervous ſyſtem, and all the diſcord upon

the ſubject may be reconciled. Thus, tonics gave firmneſs to the whole body, and made ſlight impreſſions produce correſponding actions—the fevers threw all the morbid excitement into the arteries, and gave time to the nerves to recover their loſt tone—the ulcers acted nearly in the ſame way, but prevented, by a diſcharge, too great a degree of action. It is obſervable, that their violence and continuance muſt be conſiderable to abſorb all the morbid excitement, and give time to the nerves to become firm. All the uſual ſtimuli will act conſiderably upon the nerves, unleſs a part is much affected by an acute diſeaſe, and then its excitability is ſo accumulated as to throw itſelf in the way of every ſtimulus.

Should inflammatory action exiſt, it ſhould be reduced; for this alone, has cured convulſions, by giving ſtrength to the oppreſſed nervous ſyſtem. The practice, that contemplates giving tone by the abſtraction of ſtimuli, appears abſurd at the firſt ſight; but reflection approves of it, and facts confirm its propriety. The arterial ſyſtem has ſhewn too many evidences of it to leave a doubt. It has been proſtrated by the exceſs and ſtimulus of the blood; ſo has the nervous occaſionally, by the exceſs of action in the arteries. This law appears far from being partial or limited in its extent. The action of cold, in a ſultry day, by abſtracting the ſuperabundant ſtimulus of heat and

giving tone, is a familiar inſtance of it. The impreſſion being made upon the arteries, they would ſuffer the moſt materially, were not the nerves poſſeſſed, in thoſe inſtances, of great mobility or diſpoſition to be thrown into action.

By attending to that great principle in medicine, to be guided " by the preſent ſtate of the ſyſtem," we ſhall be able to effect much in the cure of this diſeaſe. Had this principle been known, or properly attended to, it would have prevented bleeding, and bark and wine, in their turns, from proving deſtructive in intermittent, hectic, puerperal, and ſcarlatina fevers. All that obloquy, that medical writers, even of eminent characters, have uſed ſo liberally, would have been diſpenſed with.

I have placed Epilepſy in the ſame grade in nervous diſeaſes that theſe ſtates of fevers, juſt mentioned, ſtand in the arterial; like them, it has been the ſubject of litigation and different practice. Reaſon would approve of the latter, but change is not the characteriſtic of empiriciſm.

An affection of the nervous ſyſtem is not ſufficient evidence, of itſelf, to induce the idea that the ſyſtem at large labours under direct debility. Fainting and convulſions attend the yellow fever, and one of the

moſt violent inflammatory fevers I ever ſaw, was attended with tremors and ſyncope. And, it is clear to me, that three caſes in four of nervous fevers, ariſe from not reducing inflammatory action in the blood-veſſels, and permitting it to wear itſelf down.

When paroxyſms ariſe from plethora, depletion does not weaken the nervous ſyſtem, but gives it time to recover a proper degree of inſenſibility. Bleeding and purging ſhould be uſed, as long as there is an exceſs of action in the arterial ſyſtem ; and even when there is none, they ſhould be employed in the firſt ſtage in a ſmall degree, to render the application of tonics more powerful. This was Sydenham's happy method. They increaſe the excitability of the ſyſtem, without reducing it to that degree of debility that portends danger. And when a courſe of tonics is preſcribed, the ſtate of the ſyſtem ſhould always be attended to in each viſit ; for it ſeldom happens that it remains long in the ſame ſituation. The uſe of theſe remedies muſt occaſionally be laid aſide, until the inflammatory action, which accident and a change of temperature in this climate will often produce, has been deſtroyed. There appears to be an abſolute neceſſity for this precaution ; becauſe nothing but keeping it at certain grades of excitement will effect a cure.

It is not eaſy, and perhaps may be dangerous, to imitate nature in producing fevers for the cure of this diſeaſe; but we may derive ſome conſolation during their exiſtence, if they ſhould occur, from the reflection, that they have been beneficial in this, and all others of the nervous ſyſtem, as, mania, apoplexy, &c.

RELIEVING BY EXCITING MORBID ACTION IN ANOTHER PART.

If there ever was ſuch a thing as a panacea, it muſt certainly be mercury. Dr. Ruſh has emphatically called it the Sampſon of the materia medica. It has not only triumphed over ſyphilis,* dyſentery,† ſcarlatina,‡ yellow fever,§ and hepatitis,‖ been beneficial in the laſt and moſt dangerous ſtages of pneumonia, typhus mitior, ſmall-pox, tetanus, hydrocephalus and cynanche trachealis, but has lately received trophies from its ſubduing many caſes of nervous affections. The hypochondriac, the paralytic, and the epileptic, have each with pleaſure confeſſed its power.

The proper application requires much ſkill and attention, and it ſhould never be exhibited while

* Hunter, and all writers upon the ſubject. † Clark on hot climates. ‡ Ogden. § Dr. Ruſh. ‖ All late Eaſt India writers.

there is much inflammatory action in the ſyſtem. If it be conſiderable, in vain will a ptialiſm be expected; and, even if it ſhould take place, if inflammatory action is produced in the arterial, ſuperior to that which the mercury induces in the glandular ſyſtem, it will be ſtopped. This obſervation applies not only to Epilepſy, but likewiſe to all other diſeaſes. A paroxyſm of a moderately inflammatory fever will ſtop a ptialiſm; and the action of the yellow fever and hydrocephalus internus is ſuch, that unleſs depleting remedies have been previouſly uſed, a ſpitting cannot be effected until an effuſion, which it was intended to prevent, is induced.

Since mercury acts principally upon the glandular and lymphatic ſyſtems, it will not excite wonder, that its operation does not occaſion a violent impreſſion upon the nerves. This, as likewiſe ſome remedies to be mentioned hereafter, muſt be continued for a conſiderable time, and in a violent degree. Unleſs the inflammation and tumefaction of the glands of the fauces and the gums are ſuch as to prevent ſpeaking at all; or, at leaſt, diſtinctly for ſeveral weeks, little benefit can be expected. A new action is produced, that renders the glandular ſyſtem ſo excitable, that it abſorbs the effect of every ſtimulus, that might otherwiſe generate morbid excitement in another part of the animal economy. Beſides, the diſcharge prevents

any ſtimulus from raiſing the excitement to too great a degree. A ſalivation renders the arterial ſyſtem ſo irritable, that, after it has gone off, it, and not the nervous, receives whatever impreſſions are afterwards made. Zimmerman* quotes Kaau Boerhaave, in confirmation of the efficacy of a ſalivation in the cure of this diſeaſe. Dr. Ruſh, in his lectures, has likewiſe mentioned ſeveral happy terminations of it, by means of mercury; and Dr. H. Smith, it is ſaid, has uſed this medicine with the ſame beneficial effects. Theory would lead to the uſe of it, and practice has confirmed the propriety of exhibiting it.

Iſſues, ſetons, and cauſtics, may be conſidered ſomewhat in the ſame light; their operation, however, is much more feeble. They are frequently united to tonic remedies, and, to be uſeful, muſt produce inflammation to a conſiderable degree and duration. The caſes, already quoted from Mead, Willis, Hollereus, and many others to be found in medical writers, of cures by accidental wounds, gave theſe remedies a repute that time has not leſſened. Dr. *Perfect* has effected ſeveral cures by combining with a ſeton, ſome tonic medicine. Theſe laſt are not entitled to all the credit, ſince ſetons, iſſues and cauſtics have individually been of the ſame ſervice.

* Experience, Vol. II. p. 373.

There are caſes, mentioned by authors, in which the delicacy and mobility of the nervous ſyſtem was ſuch, that the leaſt increaſed action in the arterial, or a ſmall impreſſion upon the mind, threw the nerves into convulſions. In theſe inſtances, it would be moſt proper not to excite morbid action in another part, but to give tonics, particularly thoſe that acted chiefly upon the nervous ſyſtem.

In preventing the recurrence of the diſeaſe, much depends upon obviating the prediſpoſing cauſe—this we fixed in debility. Accidental cures confirm the truth of this idea, and gave the firſt ſuggeſtion of the propriety of adminiſtering tonics. Theſe ſeem to be divided into two kinds; thoſe that act principally upon the nervous ſyſtem, and thoſe that operate upon the whole animal machine; of the firſt kind are fetid gums, muſk, agreeable ſenſations, garlic, &c.; of the latter, the preparations of iron, cold bath, food, exerciſe, and other remedies.

Whenever the violent uſe of a medicine has produced the Epilepſy, it has always been religiouſly withheld in a plan of cure; but this conduct, reaſon and facts will diſcard, provided the medicine has only, by its exceſs, acted as a remote cauſe. Cold is a principal remote cauſe of the inflammatory ſtate of fever, and yet few remedies are of more ſervice

in its cure. A gleet is the product of a violent inflammation in the urethra, and yet, a freſh gonorrhœa has cured it. Wine and rich food with indolence, act as remote cauſes to the gout; and yet, in many inſtances, they are of eſſential ſervice in preventing a paroxyſm. When a remote cauſe produces a prediſpoſition, by its ſtimulus, it may be applied to advantage, in ſmall quantities, during the prediſpoſition, in preventing a diſeaſe from occurring.

Many cenſures have been paſſed upon ſtramonium and other medicines, whoſe operation Dr. Cullen conceives to beſedative; but I imagine that theſe lay, the foundation of debility, in the exceſs of ſtimulus. A ſmall doſe would give gentle tone, while a larger one produces debility. Thus a gleet generally derives its origin from the irritation of veneral matter, or ſome ſtimulating ſubſtance, and yet we apply gentle ſtimulants and aſtringents in curing it. Exerciſe in a violent degree induces a prediſpoſition to diſeaſe; but when it is gentle and acts upon debility, it reſtores health.

As ſlight affections of the nervous ſyſtem have been removed by garlic, caſtor, and aſſafœtida, I preſume they may be mentioned with propriety in this place. Nothing more being neceſſary, in the adminiſtration of them, than proportioning the doſe to the violence of the diſorder. They give a gentle ſtimulus.

Many others might be mentioned, whoſe effect is ſimilar; but it will be unneceſſary to be particular on this point, ſince their tendency is to give tone.

Preſuming that nothing now remains but prediſpoſing debility, I will notice ſome remedies that are intended to correct it; but as it is ſometimes derived from original ſtamina, and at others brought on by a combination of cauſes that have acted long on the ſyſtem, it will be neceſſary, in order to obviate it, to uſe them for a conſiderable portion of time.

The vegetable tonics conſiſt in

BARK.—This, it has been obſerved, has been combined with a ſeton to advantage; and, from a knowledge of its mode of operating, much has been expected from it. Dr. Cullen and others have found it ſerviceable; but this, like all other powerful medicines, has often failed, and even proved detrimental, by not being adminiſtered in a proper ſtate of the ſyſtem. It is rendered more palatable, by being joined with an aromatic.

OPIUM.—In this ſituation, it has been of ſingular ſervice, when given in ſmall and repeated doſes. By its general impreſſion upon the ſyſtem, and the ſtimu-

lating quality reſiding in it, one part is prevented from being thrown into excluſive action.

VALERIAN.—Much has been ſaid with regard to the efficacy of this remedy, and ſome caſes are related by authors in which it performed radical cures.

OIL OF AMBER.—This has been found uſeful, as a tonic, in Epilepſy. It is one of thoſe medicines that has been adminiſtered with ſucceſs in tetanus, and ſerves to ſhew the relationſhip between nervous diſeaſes. This view will deſtroy empiriciſm, and diſcover ſources from which we may derive much advantage.

MINERAL TONICS.

The preparations of Iron—Theſe are ſimilar to the bark in effect; but the ſimple ruſt or oxyd is attended with this additional advantage, that it keeps the body gently open, and, of courſe, keeps up a more regular excitement. Chalybeate waters, under the direction of a ſkilful phyſician, have been of ſervice. In frequenting them, we often combine travelling, amuſements, and ſociety, with the efficacy of the water; and from theſe being of utility in other nervous affections, we may indulge the hope that more

advantage, in the cure of Epilepſy, may be derived from them, than is yet known.

But the preparations of *Copper*, are of ancient uſe, in the cure of this diſeaſe. Aretæus, long ſince, mentioned their virtues, and ſucceeding phyſicians have ſubſcribed to his opinion. The cuprum ammoniacum is the preparation moſt commonly exhibited.

Dr. Sims uſed a ſolution of lunar coſtic with ſucceſs: towards the latter part of the time, he combined bark with it. His paper is inſerted in the 4th volume of the Memoirs of the Medical Society of London.

The *Flowers* of *Zinc*, have been highly recommended by the German phyſicians, in curing this and other diſorders of the nervous ſyſtem, but have not been eſtimated, to that great degree, by the Britiſh. When combined with aſſafœtida I think I have obſerved them to be of uſe.

In addition to theſe, *white vitriol* has been recommended by many authors; and Dr. Kuhn obſerves, it has been of ſervice in his practice.

ARSENIC has likewiſe been mentioned.

Perhaps there are few remedies that act more powerfully, in giving tone to the ſyſtem, than the cold-bath. Univerſal experience confirms the utility of it, in diſeaſes of too little action. To produce invigorating effects, it ſhould be employed for a ſhort time only, and in that ſtate of the ſyſtem in which the reduction of excitement will be attended with no ill conſequences; or, to uſe Dr. Cullen's expreſſion, when the ſyſtem can re-act. The ſedative operation of cold is ſuch, that a long continuance of the bath, at one time, would, in ſome inſtances, entirely deſtroy the excitement. This tonic is particularly adapted to our climate in ſummer; for the heat is ſometimes ſo intenſe as to preclude gentle exerciſe. For the preceding reaſon the cold of winter ſhould be carefully avoided.

All the diſeaſes of the nervous ſyſtem run into each other, or rather they are different grades of the ſame diſeaſe. From this circumſtance, I would employ in the cure of Epilepſy, when there is nothing but mere debility to be overcome, all thoſe remedies, that have been beneficial in dyſpepſia, hypochondriaſis, tetanus, &c. A view will be had principally to thoſe which operate upon the ſyſtem at large. Mercury has been found of advantage in theſe diſorders—ſo it has in Epilepſy. The cold-bath has been found

uſeful in theſe diſorders—ſo it has in Epilepſy. A regard muſt be had in adapting, in all caſes, the remedy to the degree of affection in the nervous ſyſtem.

Dr. Cullen, in ſpeaking of apoplexy, ſays, "Although the whole of the body is affected with the loſs of ſenſe and motion, it ſometimes takes place more upon one ſide of the body than the other; and, in that caſe, the ſide leaſt affected with palſy, is ſometimes affected with convulſions." This would lead us to ſuſpect an affinity between palſy and epilepſy; but, the latter ſtate of the ſyſtem terminating in the former, removes every ſhadow of doubt. Electricity has certainly been found ſerviceable in this diſeaſe; and, if we have proved a relationſhip between them, there is every reaſon to hope benefit from its uſe in Epilepſy; but much circumſpection will be neceſſary in the adminiſtration of it. Experience has taught that the ſhocks ſhould be light and frequent, in moſt inſtances, to be of advantage; but in this they ſhould more particularly be ſo; for a violent one would be as injurious as a violent emotion of joy, or any other ſudden and conſiderable impreſſion.

Ingenuity has been exhauſted in diſcovering remedies for this diſorder; and even the trepan itſelf has been reſorted to—but the caſes, in which it could be

preſumed uſeful, are but few. Mr. Bell* aſſures us, that it has been productive of death in two inſtances, out of three, in which it was applied. Thoſe, in which it could appear neceſſary, ariſe from injuries of the cranium, and afford a preſumption of a depreſſion or an effuſion.

Medical authors have furniſhed us with many facts, in proof of the operation of the paſſions being curative as well as productive of this diſeaſe. Since they are but little under our controul, and as it is impoſſible to excite them to the exact degree we require, it would be imprudent to rouſe them.—Theſe caſes, however, have their uſe, as they teach us what ought to be done. If prudence would withhold a remedy whoſe force it is impoſſible to foreſee, ſtill we are left to the application of thoſe whoſe effects are nearly equivalent. If we do not chuſe to excite a violent paroxyſm of joy, we may create the durable and pleaſing emotions of hope. The influence of fright has alſo been favourable; but perhaps this ſhould have been mentioned with bleeding and purging.

DIET—has much influence upon all chronic affections; and directions concerning it, ſhould be given

* Vol. III. p. 185.

with as much care, and followed with as much attention, as thoſe relative to medicine. Many diſeaſes, both of the acute and chronic kind, derive their origin from irregularities in living; abſtinence, of courſe, would ſeem, and really is, productive of advantage. Dr. Hunter has related a caſe of dyſpepſia that was cured by a continued milk diet. A queſtion will naturally ariſe, relative to the kind and quality of food that are moſt proper to be taken; this experience and reflection will anſwer. If nervous affections, and of courſe Epilepſy are moſt frequent in civilized and poliſhed life, we muſt trace the principal differences between it and uncultivated, and derive, from theſe differences, ſome aid in curing theſe diſeaſes. Perhaps in contraſting them, diet and indolence are the moſt prominent features. If the food of the ſavage and the cultivator of the ſoil be ſimple and have but little variety, and they are principally freed from nervous affections, that of the epileptic ſhould likewiſe be ſo. Whatever has a tendency to prevent the formation of theſe diſorders, has likewiſe an influence in preventing the repetion of them, when only a predispoſition exiſts. Intemperance in eating and drinking, attended with indolence, produces the gout, and we place our greateſt hopes of a radical cure in moderate and frequent exerciſe, joined to a regularity in living. That diet has all the influence we have aſcribed to it, is evident, ſince we can ſometimes tell the mode of

living, from the diſeaſe under which the patient labours. The food ſhould be ſimple, and not rich—in this manner, we ſeldom eat too much. It ſhould be taken ſeveral times a day to keep up a regular excitement. Spices, ſhould by all means be diſuſed, becauſe they ſtimulate without affording nouriſhment.

The drinks ſhould conſiſt chiefly of ſimple water; but, in a few inſtances, the beſt wine may be combined with it—ardent ſpirits ſhould eſpecially be avoided; for they produce, when taken in a conſiderable quantity, a temporary paralyſis of the faculties of the mind; and, in a continued uſe, a total deſtruction of them. The whole train of nervous diſeaſes, from the ſimple tremor to the moſt violent apoplexy, are their offspring; and I know of no one direction more neceſſary to be given than their diſuſe. Dr. Ruſh* has mentioned the group of terrible diſorders that ariſe from them; and if they are ſo deſtructive in originating diſeaſes, how much more powerful muſt they be, when acting upon prediſpoſition?

EXERCISE.—This ſhould be in kind and degree in proportion to the ſtrength of the patient; and fatigue ſhould never be induced. I have known paroxyſms excited by exceſs of exerciſe, which, had

* Medical Enquiries, Vol. I.

it been gentle, would have been prevented. This and diet ſhould require particular directions, in a plan of cure in this, as well as in all chronic diſeaſes; for much may be expected from their proper uſe and application—Travelling has particularly been recommended, and proved uſeful in ſome caſes—it has a tendency to give vigour to the body, and that tone that will deſtroy prediſpoſition.

A choice of climate will be highly requiſite, and that one preferred which is agreeably mild, and not ſubject to great changes of temperature. From a review of the prominent ideas in this eſſay, ſuch a choice would be ſuggeſted; for, we have wiſhed to avoid, every thing that would make a ſudden impreſſion upon the ſyſtem. This rule is adhered to in conſumptions, and, why not in this diſeaſe?

FINIS.